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EXAMINER
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

-- *The MAILING DATE of this communication appears on the cover sheet with the correspondence address* --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>08 April 2004</u>.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>1-59</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) <u>1-5,11-17,23-29,35-42 and 48-59</u> is/are rejected.

7)☒ Claim(s) <u>6-10,18-22, 30-34, 43-47</u> is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.

5) ☐ Notice of Informal Patent Application

6) ☐ Other: _____.

DETAILED ACTION

1.   Claims 1-59 are pending in the application.

Claim Rejections - 35 USC § 101

2.   35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 49-59 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

Claim 49 is non-statutory because it recites the phrase(s) "the machine accessible medium providing content that, when accessed by a machine causes the machine to...:" and the machine readable "medium" as such cannot provide content (instructions or code or program) without being encoded or stored in a computer readable medium and therefore fails to fall within the statutory category under 35 U.S.C 101.

Claims 50-59 are also rejected since they depend on claim 49 and contain the same deficiency.

For compliance it is suggested that the limitation is changed to read as "a computer readable medium encoded with computer executable instructions...." or

the likes. Please refer to pages 52-53 of the 101 interim guidelines for more

details to make appropriate corrections to claims 49-59 where applicable.

Claim Rejections - 35 USC § 112

3.   The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly
> claiming the subject matter which the applicant regards as his invention.

4.   Claims 49-59 are rejected under 35 U.S.C. 112, second paragraph, as being

indefinite for failing to particularly point out and distinctly claim the subject matter which

applicant regards as the invention.

Claim 49 recite the phrase(s) "the machine accessible medium providing content

that, when accessed by a machine causes the machine to...:" which is vague and

indefinite because it is unclear how a medium can provide content. A medium can have

instructions stored or encoded on it etc., but it is not clear what the machine accessible

content is, whether the content is instructions (or code or program) stored or encoded

on the medium.

Claims 50-59 are also rejected since they depend from claim 49 and contain the

same deficiency.

Appropriate corrections are required for claims 49-59.

Claim Rejections - 35 USC § 102

5.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that

form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6.   Claims 1-5,11-17,23-29,35-42,48-54 are rejected under 35 U.S.C. 102(e) as

being anticipated by Johnson et al [US Pat: 6,920,146].

Regarding claim 1, Johnson et al in their invention of "Switching Device with

Multistage Queuing Scheme" disclosed a method **(Figs 1-2, col 5, lines 16-48)**

comprising: providing a plurality of bins stored in a memory **(storage/queues for**

ports), each of the bins including a number of rules **(determination logic, col 4, lines**

29-65), each rule specifying a source port range and a destination port range **(port**

groups, col 5, lines 1-16); identifying, from the plurality of bins **(priority queues)**, a bin

corresponding to a network path and a protocol of a received packet **(col 4, lines 20-**

28); comparing a source port and a destination port of the received packet with the rules

of the corresponding bin **(col 5, lines 16-48)** ; and if the source port of the received

packet is within the source port range of a rule and the destination port of the received

packet is within the destination port range of the rule, applying an action associated with

the rule to the received packet **(based on unicast, multicast or broadcast packet types, col 5, lines 50-59)**.

Regarding claims 2, 50, Johnson et al disclosed wherein the rule matching the source and destination ports of the received packet comprises a highest priority matching rule **(col 6, lines 20-23)**.

Regarding claim 3, 51, Johnson et al disclosed wherein the source port range of each rule is specified by a source port lower bound and a source port upper bound; and the destination port range of each rule is specified by a destination port lower bound and a destination port upper bound **(input and output buffered, col 6, lines 36-42)**.

Regarding claim 4, 40, 52, Johnson et al disclosed wherein the source port of the received packet is within the source port range of a rule if the packet's source port is greater than or equal to the source port lower bound of the rule and less than or equal to the source port upper bound of the rule **(col 5, lines 50-58)**; and the destination port of the received packet is within the destination port range of the rule if the packet's destination port is greater than or equal to the destination port lower bound of the rule and less than or equal to the destination port upper bound of the rule **(col 6, lines 24-42)**.

Regarding claim 5, 54, Johnson et al disclosed wherein identifying a bin corresponding to a network path and a protocol of a received packet **(col 4, lines 20-28)** comprises: identifying, from a number of entries in a data structure, an entry having a source address prefix matching a source address of the received packet **(packet related data, col 5, lines 50-67)**, the matching entry including a first identifier ;

identifying, from a number of entries in another data structure, an entry having a

destination address prefix matching a destination address of the received packet **(col 6,**

lines 1-8), the matching entry including a second identifier; and identifying, from the

number of bins, a bin corresponding to the first and second identifiers and the protocol

(col 6, lines 9-23).

Regarding claims 11, 23, Johnson et al disclosed a method **(Figs 1-2, col 5,**

lines 16-48) comprising: identifying, from a plurality of bins stored in a memory

(storage/queues for ports), a bin corresponding to a network path of a received

packet, each of the bins including a number of rules **(determination logic, col 4, lines**

29-65); issuing a command to a classification circuit **(item 30 of Fig 2)**, the command

identifying the corresponding bin; copying the rules of the corresponding bin from the

memory to the classification circuit **(col 4, lines 06-67, col 5, lines 1-16)**, wherein the

classification circuit compares at least one transport level field of the received packet

with each of the rules and provides a match signal if a rule matches the at least one

transport level field of the packet **(col 5, lines 7-16)**; and in response to the match

signal, applying an action associated with the matching rule to the received packet **(col**

5, lines 17-30).

Regarding claims 12, 24, 37, Johnson et al disclosed wherein the matching rule

comprises a highest priority matching rule **(col 6, lines 20-23)**.

Regarding claims 13-14, 25, 38, Johnson et al disclosed wherein the at least one

transport level field of the received packet comprises a source port and a destination

port **(col 5, lines 50-57)**, wherein each rule of a bin includes a source port lower bound,

a source port upper bound, a destination port lower bound, and a destination port upper

bound **(input and output buffered, col 6, lines 36-42)**.

Regarding claims 15, 27, 40, Johnson et al disclosed wherein a rule matches the

at least one transport level field of the packet if: the source port of the received packet is

greater than or equal to the source port lower bound of the rule and less than or equal

to the source port upper bound of the rule **(col 5, lines 50-58)**; and the destination port

of the received packet is greater than or equal to the destination port lower bound of the

rule and less than or equal to the destination port upper bound of the rule **(col 6, lines**

24-42).

Regarding claims 16, 28, 41, 53, Johnson et al disclosed wherein the

corresponding bin further corresponds to a protocol associated with the received packet

(col 4, lines 20-24, lines 50-59).

Regarding claims 17, 29, 42, Johnson et al disclosed wherein identifying a bin

corresponding to a network path and a protocol of a received packet **(col 4, lines 20-**

28) comprises: identifying, from a number of entries in a data structure, an entry having

a source address prefix matching a source address of the received packet **(packet**

related data, col 5, lines 50-67), the matching entry including a first identifier ;

identifying, from a number of entries in another data structure, an entry having a

destination address prefix matching a destination address of the received packet **(col 6,**

lines 1-8), the matching entry including a second identifier; and identifying, from the

number of bins, a bin corresponding to the first and second identifiers and the protocol

(col 6, lines 9-23).

Regarding claim 26, 39, Johnson et al disclosed wherein the classification circuit

comprises: a first comparison circuit **(item 32 of Fig 2)** to compare the source port of

the received packet with the source port lower and upper bounds of one of the rules; a

second comparison circuit **(item 34 of Fig 2)** to compare the destination port of the

received packet with the destination port lower and upper bounds of the rule **(col 5,**

lines 1-6); and an output circuit **(item 36 of Fig 2)** to output a match signal if a rule of

the corresponding bin matches the source and destination ports of the received packet

(col 5, lines 31-48).

Regarding claim 35, Johnson et al disclosed wherein the memory, the processing

system, and the classification circuit comprise a single processing device **(item 26, Fig**

2, col 4, lines 66-67, col 5 lines 1-6).

Regarding claim 36, Johnson et al disclosed a system **(Figs 1-2)** comprising: a

bus **(item 24 of Fig 1)**; a processing device **(item 26 of Fig 1)** coupled with the bus ,

the processing device including a memory **(packet storage of Fig 1)**, the memory

having a plurality of bins stored **(queues)** therein, each bin including a number of rules,

a processing engine **(decision logic, item 22 of Fig 1)**, the processing engine

programmed to identify, from the plurality of bins **(col 4, lines 29-59)**, a bin

corresponding to a network path of a received packet, and a classification circuit **(item**

26 of Fig 1, col 3, lines 45-60) coupled with the memory and the processing engine,

the classification circuit to identify, from the rules of the corresponding bin, a rule

matching at least one transport level field of the packet; and a network interface coupled

with the bus, the network interface to couple the system with an optical link (col 4, lines .

Regarding claim 48, Johnson et al disclosed wherein the memory comprises a

static random access memory **(col 4, lines 60-67, col 5, lines 1-40).**

Regarding claim 49, Johnson et al disclosed an article of manufacture **(Figs 1-2,**

col 5, lines 16-48) comprising: a machine accessible medium providing content that,

when accessed by a machine, causes the machine to identify, from a plurality of bins

stored in a memory, a bin corresponding to a network path of a received packet, each of

the bins including a number of rules **(col 4, lines 29-59)**; issue a command to a

classification circuit, the command identifying the corresponding bin; copy the rules of

the corresponding bin from the memory to the classification circuit, wherein the

classification circuit **(item 30 of Fig 2, col 4, lines 06-67, col 5, lines 1-16)** compares

at least one transport level field of the received packet with each of the rules and

provides a match signal if a rule matches the at least one transport level field of the

packet **(col 5, lines 7-16)**; and in response to the match signal, apply an action

associated with the matching rule to the received packet **(col 5, lines 17-30)**.

Allowable Subject Matter

7.   Claims 6-10,18-22, 30-34, 43-47 are objected to as being dependent upon a

rejected base claim, but would be allowable if rewritten in independent form including all

of the limitations of the base claim and any intervening claims.

8.   Claims 55-59 are objected to as being dependent upon a rejected base claim,

but would be allowable if rewritten in independent form including all of the limitations of

the base claim and any intervening claims and if the rejections under 35 U.S.C 101 and

112 2nd paragraph made in this office action are overcome.

9.   The prior art fails to teach or fairly suggest the following limitations recited in

claims 6,18,22,30,43,55 for identifying a bin corresponding to a network path and a

protocol of a received packet comprises:

        searching a source address data structure to find a first index and a third index,

the first index associated with a fully specified filter having a source prefix matching the

source address of the packet, the third index associated with a partially specified filter

having a source prefix matching the source address of the packet;

        searching a destination address data structure to find a second index and a

fourth index, the second index associated with a fully specified filter having a destination

prefix matching the destination address of the packet, the fourth index associated with a

partially specified filter having a destination prefix matching the destination address of

the packet;

        forming a key from the first index, the second index, and the protocol; and

searching a primary table for an entry matching the key, the primary table including a

number of entries, each entry corresponding to one of a fully specified filter, a fully

specified filter intersection, and an indicator filter; wherein an entry of the primary table

matching the key will identify the corresponding bin.

Conclusion

10.   Any inquiry concerning this communication or earlier communications should be directed to the attention to Venkatesh Haliyur whose phone number is 571-272-8616. The examiner can normally be reached on Monday-Friday from 9:00AM to 5:00 PM. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edan Orgad can be reached @ (571)-272-7884. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the group receptionist whose telephone number is (571)-272-2600 or fax to 571-273-8300.

11.   Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197(toll-free).

/Venkatesh Haliyur/

Examiner, Art Unit 2619

/Edan Orgad/

Supervisory Patent Examiner, Art Unit 2619